

EXHIBIT 1

REDACTED

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1 All counsel will be noted
2 on the stenographic record.
3 The court reporter is
4 Michelle Ridgway, also with
5 Lexitas.
6 And would you please swear
7 in the witness.
8 (Witness sworn.)
9 - - -
10 ... GORANKA BJEDOV, Ph.D.,
11 having been first duly sworn,
12 was examined and testified as
13 follows:
14 - - -
15 EXAMINATION
16 - - -
17 BY MS. RHEE:
18 Q. Good morning.
19 A. Good morning.
20 Q. I want to start off by
21 asking whether or not you've ever been
22 deposed before.

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1 A. Never.
2 Q. Okay.
3 A. Sorry.
4 Q. Lucky you.
5 A. Yeah. Depends on how you
6 look at it, but...
7 Q. Okay. Given that, just
8 want to go over some basic ground rules.
9 I'm sure they've already been covered,
10 but just on the record --
11 A. Of course.
12 Q. -- I will be asking you
13 questions.
14 A. Mm-hmm.
15 Q. I need you to wait for me
16 to finish asking the question, and then
17 I will wait for you to answer, then back
18 and forth. Okay?
19 A. Makes sense. Yes.
20 Q. Okay. Let me begin by just
21 asking about your background. Okay?
22 A. All right.

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1 Q. Okay. So I think I
2 understand your undergraduate degree is
3 from Purdue University; is that right?
4 A. No, that is not correct.
5 My undergraduate degree is
6 from University of Zagreb.
7 Q. Okay.
8 A. Z-A-G-R-E-B. Currently,
9 the capital of Croatia. But it was
10 obtained during the time of Yugoslavia.
11 Q. Okay. And that was a
12 Bachelor of Science?
13 A. By American standard, it
14 would be actually considered Bachelor's
15 of Engineering.
16 Q. Okay.
17 A. But when it was translated,
18 I didn't know, so it was translated as
19 Bachelor's of Science. It was a
20 five-year degree, basically.
21 Q. In engineering?
22 A. In engineering and with

Page 13

1 thesis. Yes.
2 Q. Okay. And it was civil
3 engineering; is that right?
4 A. That is correct. It was
5 civil engineering, yes.
6 Q. For those of us who do not
7 have an engineering background --
8 A. Mm-hmm.
9 Q. -- how would you describe
10 what civil engineering is?
11 A. So civil engineering is an
12 oldest area of engineering, and it
13 concerns itself with things like -- you
14 have several different subfields, so I'm
15 going to go through those.
16 For example, you have
17 probably the oldest one is the -- what
18 we call the static subfield, and that
19 one concerns itself with building
20 structures, like buildings. To a lesser
21 extent, bridges. But you're talking
22 about large buildings.

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1 You have fluid mechanics,
2 which happens to be my subfield of
3 specialization. And that one really
4 concerns itself with everything related
5 to not just, you know, water and sun,
6 but also things like air, you know,
7 basically fluid motion, fluid movement,
8 and is highly computational field.

9 Then you have the third
10 field that is -- depending on where you
11 -- how you call it, but let's -- let's
12 call it traffic engineering. These are
13 the people that focus on roads,
14 airports.

15 In my system, in my world,
16 traffic engineering did not involve
17 things like, you know, traffic lights
18 and directing the traffic but just
19 really building things that are related
20 to that.

21 Then you have, for example,
22 geotechnical engineering, which is also

Page 15

1 highly computational, and that one is
2 involved with all aspects of all of our
3 structures, everything that we built
4 stands on the ground.

5 And the ground is a fairly
6 complex mix of many particulate and
7 nonparticulate soils. And so
8 geotechnical engineering, their job is
9 to tell you what you're really standing
10 on, what can you expect of your
11 substrate to give you so that you can
12 then build the appropriate foundation
13 and things like that.

14 They also have a
15 subspecialty, especially in California,
16 earthquake engineering. So earthquake
17 engineering would be a subfield of
18 geotechnical engineering, and so those
19 two fields obviously also highly
20 computational.

21 I think that pretty much
22 summarizes the whole field, yes.

Page 16

1 Q. Okay. That's super
2 helpful.

3 And after you received your
4 undergraduate degree in Croatia, it
5 looks like you came to the United
6 States; is that right?

7 A. That is correct. I came to
8 the United States.

9 Q. Okay. And you got a
10 Master's of Science in civil engineering
11 from Clarkson University?

12 A. That is correct.

13 Q. Okay. And, again, was your
14 subspecialty at that time fluid
15 mechanics --

16 A. Computational fluid
17 mechanics, yes. Correct.

18 Q. Okay. Okay. And then you
19 stayed at Clarkson, it looks like, and
20 you got a Ph.D. in engineering science;
21 is that right?

22 A. That is correct. Yes.

Page 17

1 Q. Okay. And, again, was the
2 specialty of fluid engineering?

3 A. It was computational fluid
4 mechanics. Yes.

5 Q. Okay. And then after that
6 it looks like you went to Purdue and got
7 a Master's of Science; is that right?

8 A. That is also correct. Yes.

9 Q. Okay. And at that point,
10 that's when you studied computer
11 science?

12 A. No. That -- that is
13 incorrect.

14 Q. Okay.

15 A. You started with my
16 undergraduate degree.

17 Q. Yeah.

18 A. Prior to my undergraduate
19 degree, my undergraduate -- sorry -- my
20 high school education was in computer
21 science, and in particular, in
22 informatics.

Page 18

1 And so I started
2 programming when I was 13. I went to
3 the high school for informatics. By the
4 time I was 18, I was a little bit burnt
5 out of coding, and so I decided to study
6 a different field of engineering.

7 And -- but throughout all
8 of my studies, you really can't get a
9 master's these days, or even a Ph.D.,
10 without coding. And so I'm continuing
11 to code and program.

12 But during this time, also,
13 the whole space develops tremendously.
14 You start getting new programming
15 languages and so on.

16 And so by the time that I
17 get a job at Purdue as a faculty
18 teaching program to engineering
19 students, I have decided to basically
20 take a formal look at the field that
21 I've been in for a long time and, you
22 know, bring my knowledge to the level

Page 20

1 degrees, other than the ones we covered?

2 A. No, I do not have any
3 degrees, additional.

4 Q. Okay. Okay. And then your
5 teaching experience, I take it, was when
6 you were at Purdue; is that right?

7 A. I have teaching experience
8 at Purdue, but I've actually been
9 instructor in the last two years of my
10 Ph.D. at Clarkson.

11 So as an instructor you
12 also teach classes, and so I -- I've
13 done that at Clarkson as well. So I
14 have two years of teaching experience
15 there and then seven years of teaching
16 experience at Purdue.

17 Q. Okay. So let me just put
18 some dates to that.

19 A. Sure.

20 Q. Your teaching experience at
21 Clarkson was in the last two years of
22 your Ph.D.?

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1 that I felt it should be. And so that's
2 when I get my master's in computer
3 science.

4 You will note that that
5 master's was not thesis master's. I was
6 mostly interested in coursework.

7 Q. Okay. That's very helpful.

8 And that is the sum total
9 of your educational background; is that
10 right?

11 MR. TESLICKO: Object to
12 form.

13 THE WITNESS: So, no, not
14 really.

15 When you are faculty, you
16 receive a lot of additional
17 training. I'm not sure how much
18 detail you want to go into.

19 BY MS. RHEE:

20 Q. Yeah. Let me -- let me
21 rephrase the question, then.

22 Do you have any other

Page 21

1 A. That is correct.

2 Q. Okay. So that's 1990 to
3 1992?

4 A. No. It is 1989 to 1991.

5 Q. Okay. Thank you.

6 And then your seven years
7 of experience at Purdue, what are those
8 years?

9 A. Those are 1991 to 1998.

10 Q. Okay. And what was your
11 title when you were teaching at Purdue?

12 A. I was -- at Purdue I was --
13 for most of the time, I was assistant
14 professor. But for the last year, I was
15 associate professor. I don't remember
16 the exact time on when I was promoted to
17 associate, when I got tenure. But I --
18 probably '97 -- '97, most likely.

19 Q. Okay. And this was in the
20 School of Civil Engineering?

21 A. No. This was in the
22 department -- well, actually, yes, it

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1 guess the middle of 2010 through
2 February of 2019, you were at Facebook?
3 A. That is correct as well.
4 Q. Okay. And your title at
5 Facebook was a performance and capacity
6 engineer?
7 A. That is correct as well.
8 Yes.
9 Q. Okay. And since February
10 of 2019 --
11 A. Mm-hmm.
12 Q. -- where have you been
13 working?
14 A. I haven't.
15 Q. Lucky you.
16 A. You know, I would like to
17 invite all of you to join me.
18 Q. That sounds delightful.
19 A. So to answer your question,
20 since February '19 I have been mostly
21 hiking around the world. So I've hiked
22 two different caminos. I've just

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1 finished Tour du Mont Blanc. I've done
2 the Inca Trail. I happen to spend a lot
3 of my time hiking.

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Page 40

[illegible][illegible]

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[illegible]

1. [REDACTED]

2. [REDACTED]

3. [REDACTED]

4. [REDACTED]

5. [REDACTED]

6. [REDACTED]

7. [REDACTED]

8. [REDACTED]

9. [REDACTED]

10. [REDACTED]

11. [REDACTED]

12. [REDACTED]

13. [REDACTED]

14. [REDACTED]

15. [REDACTED]

16. [REDACTED]

17. [REDACTED]

18. [REDACTED]

19. [REDACTED]

20. [REDACTED]

21. [REDACTED]

22. [REDACTED]

23. [REDACTED]

24. [REDACTED]

25. [REDACTED]

26. [REDACTED]

27. [REDACTED]

28. [REDACTED]

29. [REDACTED]

30. [REDACTED]

31. [REDACTED]

32. [REDACTED]

33. [REDACTED]

34. [REDACTED]

35. [REDACTED]

36. [REDACTED]

37. [REDACTED]

38. [REDACTED]

39. [REDACTED]

40. [REDACTED]

41. [REDACTED]

42. [REDACTED]

43. [REDACTED]

44. [REDACTED]

45. [REDACTED]

46. [REDACTED]

47. [REDACTED]

48. [REDACTED]

49. [REDACTED]

50. [REDACTED]

51. [REDACTED]

52. [REDACTED]

53. [REDACTED]

54. [REDACTED]

55. [REDACTED]

56. [REDACTED]

57. [REDACTED]

58. [REDACTED]

59. [REDACTED]

60. [REDACTED]

61. [REDACTED]

62. [REDACTED]

63. [REDACTED]

64. [REDACTED]

65. [REDACTED]

66. [REDACTED]

67. [REDACTED]

68. [REDACTED]

69. [REDACTED]

70. [REDACTED]

71. [REDACTED]

72. [REDACTED]

73. [REDACTED]

74. [REDACTED]

75. [REDACTED]

76. [REDACTED]

77. [REDACTED]

78. [REDACTED]

79. [REDACTED]

80. [REDACTED]

81. [REDACTED]

82. [REDACTED]

83. [REDACTED]

84. [REDACTED]

85. [REDACTED]

86. [REDACTED]

87. [REDACTED]

88. [REDACTED]

89. [REDACTED]

90. [REDACTED]

91. [REDACTED]

92. [REDACTED]

93. [REDACTED]

94. [REDACTED]

95. [REDACTED]

96. [REDACTED]

97. [REDACTED]

98. [REDACTED]

99. [REDACTED]

100. [REDACTED]

14 Q. Okay. That's super
15 helpful.
16 When you say that you were
17 a high-level Facebook employee --
18 A. Mm-hmm.
19 Q. -- I think I have that
20 right -- what do you mean by high level?

21 [REDACTED]

10 Q. Okay.

11 A. So you have two different

12 tracks. You have an engineering IC

13 track, which is the part that I am of,

14 and inside that track, yes, I believe

15 there was maybe five people.

16 Inside management, they may

17 have had 2,000, for all I care. I have

18 no idea how many managers were that

19 level.

20 Q. Okay. That's helpful.

21 So you were not a manager

22 at Facebook?

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1 A. No, I was not a manager at
2 Facebook.
3 Q. All right. You were an
4 individual contributor?
5 A. That is correct. Yes.
6 Q. Okay. And so you are only
7 talking about seniority levels for
8 individual contributors?
9 A. Very correct. For
10 engineers.
11 Q. Okay. Well, but there are
12 lots of engineers who are managers as
13 well, correct?
14 A. There are a lot of
15 engineers who make the transition to the
16 management track, yes.
17 Q. Okay. Okay. So your
18 testimony about being [REDACTED]
19 [REDACTED] --
20 A. Mm-hmm.
21 Q. -- for engineers are about
22 individually contributing engineers?

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1 A. Yes.
2 Q. This is very helpful. I
3 appreciate the clarification.
4 And since February of 2019,
5 you have been -- is it fair to say
6 retired?
7 A. Yes.
8 Q. Okay.
9 A. I consider myself retired.
10 Yes.
11 Q. Okay. How did you come
12 about being retained in this case?
13 MR. TESLICKO: I just
14 remind the witness not to
15 disclose the substance of any
16 communications with Plaintiffs'
17 counsel.
18 THE WITNESS: So I was
19 contacted by the plaintiffs and
20 asked if I felt that I could --
21 MR. TESLICKO: Just remind
22 you not to disclose the

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1 substance of any communications
2 with counsel.
3 THE WITNESS: Yeah. So,
4 basically, I was contacted by
5 the plaintiffs, and we discussed
6 things, and I decided to accept
7 their request to help them put
8 together my -- my report.
9 BY MS. RHEE:
10 Q. Okay. And when was that?
11 A. First contact was about two
12 years ago. Yes, two years ago. Summer
13 2023. But then nothing really happened
14 until -- I think we finished all the
15 paperwork in, like, January of 2024.
16 Don't hold me on the -- but, roughly,
17 that timeframe.
18 Q. Okay. Okay. At the time
19 that Plaintiffs contacted you, you had
20 not done any expert work before; is that
21 right?
22 A. That is correct. Yes.

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1 Q. Okay. Do you know how
2 Plaintiffs found you?
3 MR. TESLICKO: I just
4 remind the witness again not to
5 disclose the substance of any
6 communications with counsel.
7 THE WITNESS: I actually
8 don't, no.
9 BY MS. RHEE:
10 Q. So you got a call out of
11 the blue, at least from your
12 perspective?
13 A. From -- from my
14 perspective. And I can even describe
15 the situation. I got an e-mail while I
16 was on one of my trips, and I'm --
17 Q. And you went to an internet
18 cafe and got some Wi-Fi.
19 A. -- as you can imagine that
20 it impacted that particular day, and --
21 Q. Where were you?
22 A. I was in Croatia at the

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1 time. I was, actually, after my trip,
2 with my mom. That's why I remember the
3 timing.

4 And -- and so I responded
5 to that particular e-mail, and, you
6 know, obviously this is your world. And
7 for maybe for all of you, this would be
8 like, well, you know, it's just DOJ.
9 For me it's like, oh, my God, what did I
10 do now.

11 And -- and so we set up the
12 time to talk on the phone, time
13 differences being what they are.

14 We ended up talking, and,
15 obviously, that communication, my
16 understanding is it's protected. And
17 so --

18 Q. I got it. Okay.

19 A. Mm-hmm.

20 Q. Have you been retained in
21 any other case to provide expert work?
22 A. No.

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1 Q. Okay. So this is the one
2 and only?

3 A. This is my one and only,
4 yes.

5 Q. Okay. Based on that, I
6 take it you've never put yourself up as
7 a testifying expert before?

8 A. So there was one situation
9 where I was specifically requested by a
10 congressperson from Indiana to be
11 provided by Facebook to testify in
12 Congress hearings.

13 Not sure whether you
14 consider that or not, but there -- there
15 was that particular experience as well.

16 Q. Okay. And did you actually
17 testify before Congress?

18 A. I was present at the
19 hearings.

20 Q. What does it mean to be
21 "present at the hearings"?
22 A. So they had hearings --

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1 this is 2012, 2013. So I can tell you
2 that Mr. Eric Cantor was the Speaker of
3 the House at the time.

4 Q. Okay.

5 A. I -- whatever. He was
6 Republican lead at the time.

7 Q. Okay.

8 A. So he was -- he was -- it
9 was during his tenure.

10 Q. Okay.

11 A. And they were the
12 Republican caucus. And I apologize,
13 because all of these terms are very much
14 outside of my normal vocabulary, so if I
15 misuse some of them, I'm sorry.

16 They were having a hearing
17 on, you know, status of women in
18 technology and -- and in those fields.
19 And in particular, I received a request
20 from Facebook's office in Washington
21 that I be present. That was very
22 unusual. And the explanation was that

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1 there was a particular congressperson
2 from Indiana who wanted me -- who wanted
3 Facebook to provide me as a witness.

4 Again, in that kind of
5 situation, you just do what your company
6 wants you to do. And I was in
7 Washington, D.C., present at the
8 hearings.

9 Q. So physically present?

10 A. Physically present, yeah.
11 I was in the room, sitting next to the
12 congresswoman, and watched the whole
13 thing sort of go around me.

14 Q. Okay. So you watched the
15 hearing.

16 Did you talk at the
17 hearing?

18 A. No.

19 Q. Okay.

20 A. I was instructed by our
21 team to not say anything unless I was
22 specifically asked a question. Nobody

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1 list of candidates in this
2 field. Like -- no.
3 BY MS. RHEE:
4 Q. Okay.
5 A. This is completely outside
6 of my area of expertise.
7 Q. Okay. So also safe to say
8 you've never written an expert report
9 before?
10 A. That is very correct. Yes.
11 Q. Okay. How many people from
12 Keystone Strategy were assigned to help
13 you?
14 A. I actually don't know the
15 answer to that question.
16 Q. How do you not know?
17 A. I can only tell you,
18 roughly, how many people I interacted
19 with.
20 Q. Okay.
21 A. But were there people doing
22 work that, you know, I am unaware of? I

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1 don't know. So I don't -- I honestly
2 don't know the answer to your question.
3 I personally interacted
4 with -- let me think -- maybe ten
5 people. Again, order of magnitude.
6 Q. Okay.
7 A. So ten.
8 Q. Okay. How many hours have
9 you personally spent in preparation of
10 your reports in this case?
11 A. That is a very complex
12 question. I -- let me think.
13 Approximately, couple of
14 hundred hours, I would guess. Yeah, I
15 would -- I would guess couple of hundred
16 hours, maybe 300.
17 Q. Okay. Well, you're
18 charging by the hour, right?
19 A. I am.
20 Q. Okay. And sitting here
21 today, you don't know how much you've
22 charged so far?

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1 A. I do know the answer to
2 that question.
3 Q. Okay.
4 A. So I have -- so far I have
5 charged about \$150,000 --
6 Q. Okay.
7 A. -- total.
8 I have been paid out
9 \$80,000. So \$80,000. That's 200 hours.
10 Yeah. So a couple hundred hours. Like
11 500 hours or so.
12 Q. Okay. Yeah. Sorry. I
13 can't do math, hence I took out my phone
14 to pull out the calculator.
15 A. No, no. That's fine.
16 But I do remember -- as I
17 said, I do remember the exact numbers
18 for how much I have billed for and how
19 much I have been -- received payment
20 for, but I haven't billed for all of the
21 hours yet.
22 Q. Okay. So sitting here

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1 today, your best approximation is about
2 500 hours; is that what I'm hearing?
3 MR. TESLICKO: Object to
4 form.
5 THE WITNESS: I would
6 guess 500 hours, yes, on
7 preparation of reports. Yes,
8 that sounds reasonable.
9 BY MS. RHEE:
10 Q. Okay. Do you know how many
11 hours the staff at Keystone have worked
12 on your report?
13 A. Not the slightest idea.
14 Q. Okay. How did you go about
15 selecting what you reviewed in
16 connection with your report?
17 A. So as I'm sure you're
18 aware, there was a mountain of documents
19 in this case.
20 Q. You don't say.
21 A. And so my strategy for --
22 when you get the mountain, there is no

Page 58

1 way I can --

2 Q. Well, did you get a

3 mountain?

4 A. Oh, yeah. I had access to

5 everything that was produced in the

6 case.

7 Q. Okay.

8 A. And so now I -- you know, I

9 see all of these documents, and I see

10 the timelines. And I'm going, like, all

11 right.

12 Q. When you say "timelines,"

13 what do you mean? What are you

14 referring to?

15 A. Oh, I'm talking about when

16 my report needs to be written and then

17 when the rebuttal report needs to be

18 written --

19 Q. I see.

20 A. -- and then the reply

21 report.

22 From my perspective, this

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1 is all moving fairly quickly. But,

2 again, I'm giving you a judgment on

3 something that I really have no basis

4 for comparison. So you may disagree and

5 you may reasonably say no, no, no, this

6 is a very slow one.

7 For me, personally, I felt

8 that things were moving quickly.

9 Q. Okay. So when did you

10 first get access to, as you put it, the

11 mountain of documents in connection with

12 when you thought your first report was

13 due?

14 A. I really don't remember. I

15 honestly don't remember. This was a

16 long time ago. I would really hate to

17 make a guess here. I don't remember.

18 I'm sorry.

19 Q. Okay. Well --

20 A. A long time ago.

21 Q. -- what do you mean by "a

22 long time ago"? In 2025?

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1 A. I think I've had access to

2 some of the stuff before 2025.

3 Q. Okay.

4 A. But definitely not all of

5 the stuff.

6 Q. Okay.

7 A. But there was just a lot of

8 documents.

9 Q. Okay. And can I ask --

10 because what we have, as I'm sure you

11 know --

12 A. Mm-hmm.

13 Q. -- because they are your

14 reports, the Appendix A for each one of

15 your reports --

16 A. Mm-hmm.

17 Q. -- lists the materials that

18 you relied upon for that report, right?

19 A. It lists a subset of

20 materials that -- in particular,

21 materials that I referred to and quoted

22 in the report.

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1 I've certainly reviewed a

2 lot more things that I don't necessarily

3 quote because I find them not relevant

4 to the matter that I'm discussing.

5 Q. Okay. So I want to make

6 sure I understand.

7 What you put in those

8 appendices to your report --

9 A. Mm-hmm.

10 Q. -- is only what you cited?

11 A. That is correct. Yes.

12 Q. But that is not -- let me

13 make sure I break this down.

14 It is not everything that

15 you reviewed?

16 A. That is correct. Yes.

17 Q. Okay. And I take it, it is

18 not everything you relied upon --

19 MR. TESLICKO: Object to

20 form.

21 BY MS. RHEE:

22 Q. -- if you didn't actually

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1 cite it?

2 MR. TESLICKO: Object to

3 form.

4 THE WITNESS: No. If I am

5 using a document to form my

6 opinion or if I'm using a

7 document to -- let's put it this

8 way -- to say, well -- and here

9 is a document that confirms my

10 opinion, then I'm going to cite

11 it.

12 BY MS. RHEE:

13 Q. Okay.

14 A. But if I'm just reading a

15 document -- for example, I've read

16 transcripts of depositions, of -- number

17 of them. And I apologize. I'm really

18 terrible with names.

19 Q. Okay.

20 A. But I've read the

21 transcripts from several Google

22 witnesses in the case. I've read them

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1 for several reasons. Because I wanted

2 to see what this process looks like, but

3 also I wanted to understand, you know,

4 what are they saying, what are they

5 claiming. Are they saying things that I

6 will strongly disagree with and say,

7 well, no, that's just wrong, and I can

8 prove it is wrong.

9 Or are they saying things

10 that you can look at and go, like, well,

11 I disagree with them, but, objectively,

12 it's quibbling.

13 And so I read a lot of

14 those depositions. I don't cite them in

15 my report. They were completely

16 irrelevant to it.

17 Q. Okay. I think I

18 understand.

19 You cite, I think, 30 -- I

20 think the count is something around 32

21 unique Google documents across your

22 three reports.

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1 Does that sound roughly

2 right to you?

3 A. Oh, I remember there was

4 about 20, 21 in the first report, so the

5 numbers, order of magnitude, certainly

6 makes sense, yes.

7 Q. Okay.

8 A. And then there is a whole

9 lot of other documents that I cite --

10 Q. I totally understand, but I

11 just want to focus on the

12 Google-produced documents for now.

13 A. All right.

14 Q. Okay. You're right. You

15 cite -- or you list 20-some-odd Google

16 documents in your opening report.

17 A. Mm-hmm.

18 Q. And then in total it's

19 about 30. Sound about right?

20 A. Sounds fair. Yes.

21 Q. Okay. And based on your

22 answer just now, that is the universe of

Page 65

1 Google-produced documents, out of the

2 mountain of documents that you had

3 access to, that you either cited in your

4 reports or otherwise relied upon; is

5 that right?

6 MR. TESLICKO: Object to

7 form.

8 THE WITNESS: So there are

9 other Google documents that I

10 have read and thought, oh,

11 they -- [REDACTED]

12 [REDACTED]

13 that I didn't cite because,

14 honestly, the form that they

15 were written in, I totally

16 understand. They were

17 engineers.

18 But I didn't think that in

19 the legal sense it would be very

20 helpful to either you or the

21 judge to see [REDACTED]

22 [REDACTED]

Page 66

1 which makes perfect sense in my
2 world, but I'm going to guess
3 that anybody else will go, like,
4 what in the world are these
5 people talking about.

6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]

14 But how do you present to
15 anybody else outside of the
16 technology space what [REDACTED]

17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED].

21 BY MS. RHEE:

22 Q. So you're referring to a
document produced by Google that you

Page 68

1 job, but regardless of his objection,
2 unless he specifically instructs you not
3 to answer, you need to answer my
4 question.

5 A. And I hope, you know, that
6 so far I haven't --

7 Q. You've been great. I'm
8 really just talking to Mr. Teslicko.

9 MR. TESLICKO: If I could
10 just say, can you please wait
11 for counsel to finish her
12 question full, because that's
13 part of the problem. That would
14 be great.

15 THE WITNESS: I'm really
16 sorry for making this difficult
17 for you.

18 BY MS. RHEE:

19 Q. You're fine. So let's just
20 rewind.

21 You just talked about a
22 document produced by Google that you

Page 67

1 read --

2 A. Mm-hmm.

3 Q. I think you need to just
4 say yes or no on the record.

5 A. Oh. Yes.

6 Q. -- that you believe is
7 [REDACTED]?

8 A. That is correct.

9 MR. TESLICKO: Object to
10 form.

11 Sorry.

12 THE WITNESS: Sorry.

13 BY MS. RHEE:

14 Q. But you did not cite it?

15 MR. TESLICKO: Object to
16 form.

17 THE WITNESS: Could you
18 repeat the question, please.
19 And sorry about that.

20 BY MS. RHEE:

21 Q. Yeah. I'm sure you've been
22 instructed. Mr. Teslicko is doing his

Page 69

1 reviewed, correct?

2 A. That is correct.

3 Q. Okay. You did not put it
4 on any of your appendices, correct?

5 A. That is also correct, yes.

6 Q. Okay. But, nevertheless,
7 you believe that document [REDACTED]

8 [REDACTED]?

9 MR. TESLICKO: Object to
10 form.

11 THE WITNESS: I would say
12 that -- that my evaluation was

13 [REDACTED]
14 [REDACTED]
15 [REDACTED].

16 BY MS. RHEE:

17 Q. So it went into your
18 thinking about this case?

19 MR. TESLICKO: Object to
20 form.

21 THE WITNESS: Not really.
22 Outside of, man, if I were

Page 70

1 presenting this to a bunch of
2 engineers, [REDACTED]
3 [REDACTED]
4 [REDACTED]. But,
5 unfortunately, that's not my
6 audience, so, you know.
7 Outside of that, no, I --
8 you know, it's --
9 BY MS. RHEE:
10 Q. Okay. Let me try this
11 again.
12 A. Mm-hmm. Mm-hmm.
13 Q. This is one example of a
14 document that is on topic, related to
15 your opinion, but you did not put it on
16 any of the appendices. Yes?
17 MR. TESLICKO: Object to
18 form.
19 THE WITNESS: This is one
20 document that I believe -- and I
21 really believe most engineers
22

Page 71

1 would agree with me on this --
2 [REDACTED].
3 And this is one document
4 that I didn't include in the --
5 and I didn't cite and refer to
6 because I felt it was maybe --
7 let's call it too informal and
8 could be reasonably questioned
9 by anybody who hasn't worked and
10 lived in the world that I work
11 in and live in, as to how is
12 this even relevant.
13 BY MS. RHEE:
14 Q. Okay. And how many more
15 documents did you review that Google had
16 produced, that you had access to, that
17 was topically related to the subject
18 matter of your opinion but, for one
19 reason or another, you decided not to
20 put down in your appendices?
21 MR. TESLICKO: Object to
22 form.

Page 72

1 THE WITNESS: Oh. Oh,
2 wow. Really no idea.
3 BY MS. RHEE:
4 Q. Well, more than one?
5 A. More than one.
6 Q. Okay. More than ten?
7 A. You are asking me to
8 estimate, in legal proceedings,
9 something that I really -- if I had
10 known that I should keep track of, you
11 know.
12 Q. That's okay. I just want
13 your best guess.
14 MR. TESLICKO: Object to
15 form.
16 THE WITNESS: My best
17 guess would be somewhere between
18 10 and 20, maybe.
19 And you did add a
20 stipulation there that --
21 because some documents I would
22 run into would be talking about

Page 73

1 business stuff or -- so on, and
2 those -- those, I immediately
3 dismiss because they don't --
4 they have nothing to do with
5 work I'm doing and what I have
6 been asked to opine on.
7 Do you count the document
8 or not, and how many of those --
9 let's say somewhere between 10
10 and 20.
11 BY MS. RHEE:
12 Q. Okay. That's your best
13 guess, sitting here today?
14 A. That is my best guess, yes.
15 Q. Okay. Your opinion goes
16 through your timeline estimates for the
17 various DOJ steps or phases of remedy;
18 is that right?
19 MR. TESLICKO: Object to
20 form.
21 THE WITNESS: So my
22 opinion gives timelines for

Page 74

1 different parts of Plaintiffs'
2 proposed remedies.
3 BY MS. RHEE:
4 Q. Yes. Okay. So let's just
5 quickly go through those. Right?
6 A. Mm-hmm.
7 Q. DOJ's proposed remedies for
8 what they refer to as DFP --
9 A. Mm-hmm.
10 Q. -- goes in three phases,
11 right?
12 A. That is correct.
13 Q. Okay. And the first phase,
14 which is a form of integration, right?
15 The first phase is a Prebid integration,
16 right?
17 MR. TESLICKO: Object to
18 form.
19 THE WITNESS: Excuse me?
20 You say form of integration?
21 Could you tell me what you mean
22 by that.

Page 76

1 APIs, they actually need to connect to
2 something, right?
3 MR. TESLICKO: Object to
4 form.
5 THE WITNESS: So in order
6 for API to be useful, you
7 typically are connecting to a
8 system.
9 BY MS. RHEE:
10 Q. Mm-hmm.
11 A. And it's the system that
12 exposes its API.
13 So you have exchanges, and
14 inside those exchanges, there is a
15 bidding process going on. Those
16 exchanges have APIs.
17 And what we're saying is,
18 Google needs to provide APIs that would
19 level the playing field for the
20 bidding -- during the bidding process.
21 Q. Mm-hmm. Okay.
22 And what is the timeframe

Page 75

1 BY MS. RHEE:
2 Q. Well, actually, maybe I
3 should ask you.
4 What is the first phase
5 that you opine upon?
6 A. So the first phase of DFP
7 divestiture -- and you can see in my
8 report -- is creation of the APIs.
9 Those --
10 Q. APIs to what?
11 A. So you're looking at,
12 basically, application program
13 interfaces that would make Google
14 participate on the same level as other
15 exchanges in bidding process.
16 Q. Okay. So APIs to what?
17 A. So APIs to make Google
18 participate on the same level to the
19 bidding process.
20 Q. Well, do you know how APIs
21 effectuate that?
22 At least as I understand

Page 77

1 that you estimate in order for those
2 APIs to be created and confirmed to work
3 as intended?
4 MR. TESLICKO: Object to
5 form.
6 THE WITNESS: So I specify
7 that in my report.
8 And I -- is it okay if I
9 point out to where this is in my
10 report?
11 BY MS. RHEE:
12 Q. We can get there.
13 But I just want to know,
14 since this is your opinion --
15 A. Mm-hmm.
16 Q. -- it's less about your
17 report, but just your opinion.
18 Do you know how long you
19 estimated that step to take?
20 MR. TESLICKO: Object to
21 form.
22 THE WITNESS: I can answer

Page 78

1 the question. I do want to give
2 you a caveat that there are many
3 different parts, moving parts,
4 in this particular case, and so,
5 to the best of my recollection,
6 which could be off in this case,
7 if I remember correctly, it was
8 18 months.

9 It could go as high as 24,
10 but I think 18 months is a
11 reasonable amount of time for
12 creation of APIs.

13 BY MS. RHEE:

14 Q. Okay. And then you opine
15 about the next step in DOJ's proposal to
16 divest DFP, right?

17 A. Mm-hmm. That is correct.

18 Q. Okay. And what is your
19 understanding of what that Phase 2 is?

20 A. So as per Plaintiffs'
21 proposed remedies, Phase 2 is
22 open-sourcing of the final auction logic

Page 80

1 understanding of what Phase 3 entails?
2 A. So my understanding of
3 Phase 3 is that it involves what I would
4 call cutting out and moving DFP and
5 making it available for purchase to one
6 or more buyers. Obviously, the DFP
7 product that remains after Phase 1 and
8 Phase 2 have been completed.

9 Q. Okay. And what is your
10 opinion about how long that is going to
11 take?

12 A. So, again, I would like to
13 refer you to my report.

14 I estimate that DFP
15 divestiture is going to take a little
16 bit longer than the other two things,
17 and there are specific reasons for it.

18 And I think my estimate is
19 that DFP by itself should be
20 somewhere -- let's call it in 24 to
21 30 months.

22 Q. Okay. And then, finally,

Page 79

1 and making it available in an
2 open-source context.

3 Q. Okay. And what is your
4 opinion about how long that's going to
5 take?

6 A. Again, that has been
7 defined in my -- in my report, so I'm
8 not quite sure --

9 Q. Well, it's your opinion,
10 right?

11 A. In my opinion, as defined
12 in my report -- and I do want to say
13 what is in the report should be taken as
14 the accurate statement in this. You're,
15 again, looking at a timeframe of
16 18 months to 24 months.

17 Q. Okay. And then you opine
18 about how long it's going to take to
19 achieve what DOJ calls Phase 3 of DFP
20 divestiture, right?

21 A. That is correct. Yes.

22 Q. Okay. And what is your

Page 81

1 DOJ has a proposal to divest what it
2 refers to as the Ad Exchange, or AdX,
3 right?

4 A. That is correct.

5 Q. Okay. And you have an
6 opinion about how long that would take?

7 A. Yes, I do.

8 Q. Okay. And how long would
9 that take, in your opinion?

10 A. In my opinion -- and,
11 again, I will point out to my report --
12 the AdX should take about 18 months.

13 And I should say this: A
14 reasonable plan proposed in here should
15 take 18 months. And I'm giving you just
16 one reasonable approach to that
17 divestiture.

18 Q. What do you mean you're
19 giving "just one reasonable approach to
20 that divestiture"?

21 A. So if you put five
22 engineers into a room and say divest

Page 82

1 AdX, you will get seven different
2 opinions back on how that can be done.
3 I'm giving just one
4 reasonable approach to doing this, which
5 doesn't mean that somebody else may not
6 come up with a different, equally
7 reasonable approach.

8 Q. When you give these
9 timeline estimates, is it fair to say it
10 is your best guess, sitting here today,
11 about how long something is going to
12 take?

13 MR. TESLICKO: Object to
14 form.

15 THE WITNESS: No, I -- I
16 don't think that is fair to say.

17 BY MS. RHEE:

18 Q. Well, are you giving a
19 guarantee that any one of these phases
20 or projects can be completed within that
21 timeframe?

22 MR. TESLICKO: Object to

Page 83

1 form.

2 THE WITNESS: No, I'm not
3 giving a guarantee on any of
4 them.

5 BY MS. RHEE:

6 Q. Okay. And you would agree,
7 in your experience working on projects
8 in industry, every project has always
9 slipped?

10 MR. TESLICKO: Object to
11 form.

12 THE WITNESS: Actually,
13 no. And I'm going to, again,
14 refer to my -- my report and
15 give you an example of a project
16 that relates there.

17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]

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5 BY MS. RHEE:

6 Q. Mm-hmm.

7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]

17 A. Mm-hmm.

18 Q. -- you remember filming a
19 video in connection with that project,
20 right?

21 MR. TESLICKO: Object to
22 form.

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1 THE WITNESS: I'm not sure
2 if you're talking about me
3 giving a conference presentation
4 at XKL in Boston.

5 But I do remember that
6 that is just one of the many
7 talks, you know, technical
8 talks, that are not listed in my
9 résumé by, you know, line item
10 and line item.

11 But, yeah, I do remember
12 giving the talk.

13 BY MS. RHEE:

14 Q. And, in fact, you cite it
15 in your report.

16 Do you know that?

17 A. Yes. Absolutely.

18 Q. Okay.

19 A. Because I kind of explain
20 in detail what was going on, and I feel
21 that, sitting here today, you can
22 reasonably say, oh, you're making stuff

Page 110

1 up to them to decide.
 2 Completely out of my area of
 3 expertise to -- to opine on
 4 this.
 5 BY MS. RHEE:
 6 Q. So your estimate of how
 7 long something like this would take --
 8 A. Mm-hmm.
 9 Q. -- isn't dependent on
 10 whether or not any of these steps that
 11 you're walking us through --
 12 A. Mm-hmm.
 13 Q. -- because they possibly
 14 are part of the final auction logic,
 15 also need to be open-sourced?
 16 MR. TESLICKO: Object to
 17 form.
 18 THE WITNESS: All of these
 19 steps are part of the code base.
 20 My opinions are, hey, here
 21 is the code base. Do something
 22 with it.

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1 The process that I'm
 2 describing is agnostic to what
 3 the code base does.
 4 BY MS. RHEE:
 5 Q. I take it from your answer,
 6 your opinion is also agnostic as to how
 7 many items within that code base either
 8 need or do not need to be open-sourced?
 9 MR. TESLICKO: Object to
 10 form.
 11 THE WITNESS: Yes, and a
 12 no.
 13 BY MS. RHEE:
 14 Q. Okay.
 15 A. You know, the answer to
 16 that is, it depends.
 17 Q. What does it depend on?
 18 A. It depends on how the code
 19 is organized.
 20 So to give you a
 21 hypothetical that -- I think most of my
 22 colleagues at Google and probably most

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1 of my colleagues at Facebook would be
 2 horrified.
 3 If all of these things were
 4 closely interacting with each other,
 5 coupled, looking at each other's private
 6 properties without any regard for
 7 computer standards or sort of computer
 8 coding standards, modern way of
 9 developing code, then it would make a
 10 difference, because then -- honestly, it
 11 would have to be rewritten and cleaned
 12 up before it could be outsourced.
 13 But, at least in my part of
 14 the world, one of the things that Google
 15 is certainly held in high esteem for,
 16 and in my personal experience working
 17 there, is sticking to very good computer
 18 science methodology and being really
 19 strict about how the code is checked in.
 20 And, as a matter of fact,
 21 in some of the documents that, you know,
 22 your client has presented in this

Page 113

1 case -- and I can't recall off the top
 2 of my head which ones -- they actually
 3 describe the process it goes through.
 4 Code reviews. It has to be
 5 reviewed by the -- at least one other
 6 person.
 7 But, for example, if I'm
 8 trying to do the code check-in into code
 9 base that doesn't even belong to my
 10 team, then it's going to be reviewed by
 11 one other person, and it's going to be
 12 reviewed by the owner of that particular
 13 code base or subdirectory. And those
 14 are clearly identified.
 15 So Google is pretty strict
 16 about how they maintain their code base,
 17 and, in my opinion, rightfully so.
 18 And so I've, you know, made
 19 my estimates with the understanding that
 20 that is the code base that I'm dealing
 21 with, and, therefore, I'm not going to
 22 have to rewrite it. I'm not going to

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1 have to completely take it apart and
2 spend three months figuring out, you
3 know, why is this thing directly looking
4 and pulling something from a memory, you
5 know, at a particular location, because
6 that is just not allowed at Google. You
7 don't -- you know, you don't do that.

8 Q. Okay. For your assignment
9 in this case --

10 A. Mm-hmm.

11 Q. -- you did not look at the
12 actual source code with respect to any
13 of these products, right?

14 A. That is correct. Yes.

15 Q. It was just not part of
16 your assignment?

17 A. That is not part of my
18 assignment. That is correct.

19 Q. Okay. So insofar as you
20 talk about your assumptions --

21 A. Mm-hmm.

22 Q. -- about what the source

1 MR. TESLICKO: Object to
2 form.

3 THE WITNESS: That is
4 actually incorrect.

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5           Well, I -- I worked on
6 both AdSense and I had an intern
7 actually do some work for
8 AdWords. And you could argue,
9 you know, DFP gets integrated
10 fully after I leave Google. So
11 not exactly this code base.

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12 However, it is a code base
13 inside Google3. And while I was
14 at Google, we completed
15 integration from Google2 to
16 Google3.

17 And so I'm familiar with
18 the rules, in particular for C++
19 code base.

20 BY MS. RHEE:

21 Q. I just want to understand,
22 though.

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1 code looks like, that is either based on
2 your work at Google from 2005 to 2010 or
3 from Professor Weissman; is that right?

4 MR. TESLICKO: Object to
5 form.

6 THE WITNESS: I do rely on
7 my expertise, but it has been
8 informed by Professor Weissman's
9 opinions.

10 BY MS. RHEE:

11 Q. I see. Okay.

12 But with respect to Google
13 source code, specifically --

14 A. Mm-hmm.

15 Q. -- you stopped working at
16 Google some time ago?

17 A. Fifteen years ago, roughly.
18 Yeah.

19 Q. Okay. And even when you
20 were working at Google, you did not have
21 any reason or occasion to look at the
22 source code of these products, right?

1 A. Mm-hmm.

2 Q. What you're talking about
3 in terms of your familiarity is from
4 your time at Google, right?

5 A. My personal familiarity,
6 yes, it's from my time at Google.

7 Q. Okay. And that was
8 15 years ago?

9 A. That was, yes. End of my
10 time there was 15 years ago.

Q. Okay. So going to this
page ending in 501.

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1 said.

2 You did rely on

3 Mr. Levitte's testimony about GCP but

4 not about DFP?

5 A. No, not really. So --

6 Q. Well, I just want to make

7 sure, because --

8 A. Mm-hmm.

9 Q. -- just reading back your

10 answer, "I relied a lot on what he was

11 telling me about GCP, that he was

12 confirming, basically, what I would

13 expect about GCP."

14 A. So I misspoke.

15 Q. I just want --

16 A. That is absolutely fair.

17 You're absolutely fairly calling me out.

18 I misspoke. I relied.

19 I read his report and tried

20 to sort of verify. I have public

21 sources of information that tell me how

22 GCP functions.

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1 But here, I have a person

2 that actually lives that every day of

3 his life. This is his home.

4 And so I read his opinion

5 to find out if everything I know about

6 this is consistent. Is my understanding

7 of the space that he's describing

8 consistent with all the public

9 information and so on.

10 Or, for example, if he

11 brought up something that was completely

12 different than the public documentation,

13 my expectation, and so on, well, then

14 that's material.

15 Then I have to say either I

16 mistrust his opinion or -- you know, or,

17 basically, everything I know is wrong,

18 and I have to go and dig into it deeper.

19 But that hasn't happened.

20 Everything he's saying is, basically,

21 yeah, yes, yes, yes, yes, yes. Okay.

22 Let's move on.

Page 136

1 So there is nothing in his

2 deposition that changed my opinion, that

3 made me question or do additional

4 research. It was just, like, all right.

5 You know, put aside and move on.

6 Q. So your answer just now

7 talked about a standard you applied in

8 deciding whether or not you would add a

9 source to your appendix, and you said,

10 oh, well, is it material?

11 Have I got that right?

12 MR. TESLICKO: Object to

13 form.

14 THE WITNESS: As long as

15 you don't use "material" in some

16 legal way that I don't know what

17 it means.

18 BY MS. RHEE:

19 Q. I just really want to

20 understand what's the standard --

21 A. What it means to me --

22 Q. -- what's the standard you

Page 137

1 apply?

2 A. Oh, perfect.

3 So when I do my work,

4 right, I come up -- at least my personal

5 process and the one that a large number

6 of the industry participants would agree

7 with, but some tend to break -- is I

8 want to arrive to my judgment

9 independently.

10 People have a tendency to

11 run into problems when they allow

12 themselves to be anchored.

13 So, for example, before I

14 start analyzing all of this, I don't

15 want anybody telling me how long they

16 think this should take, because as much

17 as I deeply believe it wouldn't impact

18 me, I'm also aware of all of the

19 research in human psychology that says

20 it would.

21 And while I would really

22 like to believe that I would be that one

Page 138

1 exception, I don't need to take that
2 chance. So I want to do my work and my
3 analysis before I hear what anybody else
4 thinks about this.

5 And then, obviously, using
6 my experience, using access to any
7 publicly available source, using the
8 expertise, standard procedures, you
9 know, and processes, what you would call
10 good, you know, governance of the stuff,
11 I come up with my estimate.

12 Once I have that, once I
13 understand where I stand and I can
14 explain why I stand there, I will look
15 for what other people think about this.

16 In this, let's call it,
17 second stage of the evaluation, I am
18 trying to see is there something that I
19 have possibly, and I'm going to say
20 materially, forgotten in my analysis.

21 You know, you don't know
22 what you don't know. So at this point

Page 140

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]

19 Frankly, I called my
20 counsel and said, like --

21 MR. TESLICKO: Going to
22 stop you, not to disclose any

Page 139

1 in time, you are looking to other people
2 to inform you did you completely miss
3 the boat.

4 I would be surprised if I
5 did, but I would also be unprofessional
6 and careless if I didn't do that
7 evaluation.

8 And at that stage, I start
9 looking for things that have timelines.
10 What are their timelines? Let's say I
11 encounter a document that has a timeline
12 that this is going to take 15 years.

13 I have to look at that
14 document seriously, because it is a
15 completely different order of magnitude
16 than my analysis. I have to understand
17 what has informed their decision, where
18 is our disagreement. And in some cases,
19 you find out -- that wasn't the case in
20 this case.

21 [REDACTED]
22 [REDACTED]

Page 141

1 communications with counsel.

2 THE WITNESS: [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]

10 BY MS. RHEE:

11 Q. Okay. I want to unpack
12 what you just said. There's a lot of
13 information here.

14 So in coming up with your
15 initial timelines and your opinion, what
16 you relied upon was your experience?

17 A. Absolutely.

18 Q. Access to publicly
19 available sources?

20 A. Correct.

21 Q. And your expertise?

22 A. That is fair.

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1 And I also deployed the
2 standard processes and procedures used
3 in this type of an analysis. Yes.
4 Q. Okay.
5 A. Mm-hmm.
6 Q. And that was the sum total
7 so that you could stay pristine, as you
8 put it, of what you actually relied upon
9 in order to come up with your timelines?
10 MR. TESLICKO: Object to
11 form.
12 THE WITNESS: Sorry.
13 At that point in time, you
14 call that first draft, right.
15 BY MS. RHEE:
16 Q. Okay.
17 A. So that is the first step
18 in the process. You kind of put your
19 stake into the ground and say, here is
20 what I think this should take.
21 Q. Okay. And so did you put
22 all of those materials into your

Page 144

1 will know, Google will return you
2 millions of documents.
3 And you now sort through
4 those documents. Typically, you sort by
5 the validity, or let's call the
6 engineering level of trust in the
7 reporting source.
8 So I'm not going to look at
9 anything that BuzzFeed puts out. But
10 if, you know, IP Police putting it out,
11 that is important.
12 Then I will look at, you
13 know, maybe five or ten different
14 documents, and what you find, a lot of
15 times they overlap on, you know,
16 90 percent of the material.
17 I will quote you two or
18 three documents, the minimal subset,
19 that has all the information I relied
20 on, packaged in the form that I relied
21 on it.
22 But I may have seen another

Page 143

1 appendices?
2 MR. TESLICKO: Object to
3 form.
4 THE WITNESS: You have the
5 list of all of the publicly
6 available documents, yes?
7 BY MS. RHEE:
8 Q. No. I do. I'm asking is
9 that --
10 A. Yes.
11 Q. -- everything you looked
12 up, you looked at, to come up with your
13 first draft, did you put in your
14 appendices?
15 MR. TESLICKO: Object to
16 form.
17 THE WITNESS: No. And
18 allow me to explain.
19 BY MS. RHEE:
20 Q. Okay. Okay.
21 A. When you're looking for
22 publicly available information, as you

Page 145

1 five documents that had this bit, or
2 that bit, that is already in these three
3 documents, that I just don't quote.
4 You know, I have read -- I
5 don't even know how to estimate --
6 probably -- or skimmed, in my whole
7 career, hundreds and thousands of
8 documents related to these things. I'm
9 relying on all of them in some way. I'm
10 not going to quote them all here because
11 they are, in my opinion, an element to
12 the case.
13 The parts that I quote are
14 the sort of the minimal subset. Like,
15 what is the highest-quality minimal
16 subset that contains everything I have
17 relied on.
18 So everything I relied on
19 has to be in there, but it can also be
20 seen in some other documents, because --
21 Q. Well, in documents you saw.
22 A. Correct.

Page 146

1 Q. Okay.

2 A. Because, as you see, in our

3 field people tend to cut and paste,

4 copy, and especially today, you have a

5 whole ton of AI-generated documents.

6 You know, if you're going

7 to quote all of them, like, that's going

8 to be a lot of paper wasted.

9 Q. Okay. Then in the second

10 stage --

11 A. Mm-hmm.

12 Q. -- of your evaluation --

13 A. Mm-hmm.

14 Q. -- in finalizing your

15 opinion -- is that fair to say?

16 A. Yes.

17 Q. In finalizing your opinion,

18 that's when you look for material. And

19 I think your testimony was that you may

20 have materially forgotten in your

21 analysis; is that right?

22 MR. TESLICKO: Object to

Page 147

1 form.

2 THE WITNESS: No. No. I

3 think --

4 BY MS. RHEE:

5 Q. Well, I think what you said

6 was, "I'm trying to see if there's

7 something that I have possibly, and I'm

8 going to say materially, forgotten in my

9 analysis."

10 A. Mm-hmm. That is correct.

11 That is the verification

12 stage. And so in that stage, I actually

13 start looking at other people's

14 timelines. [REDACTED]

15 [REDACTED]

16 But as you can probably

17 understand, you can't find -- if you go

18 and do the public search and say how

19 long would it take to divest the DFP,

20 even if you say -- you know, among

21 engineers, if you were to say how long

22 would it take to migrate DFP to

Page 148

1 different known proprietary environment,

2 let's search for that, you're not going

3 to find any documents with the time

4 estimate for that.

5 That type of work is

6 typically done by the company that owns

7 the product internally. It is not

8 exactly available online.

9 And so, you know, that kind

10 of information I'm hoping I'm going to

11 find somewhere. But I'm not going to

12 search for it online because I know it's

13 not available online.

14 And so in my Stage II, I am

15 trying to -- call it the testing stage.

16 I'm trying to test my work and -- and

17 look at it as if it's somebody else's

18 work and say, did the person who did

19 this work, did they do everything that

20 needed to be done? Did they encounter

21 everything? Did they do due diligence?

22 And so this is my testing

Page 149

1 due diligence stage of am I doing the

2 work at a level that I believe I should

3 be.

4 Q. Okay. And in this stage --

5 A. Mm-hmm.

6 Q. -- it looks like you

7 roughly sorted the documents to be

8 documents, as you put it, that

9 [REDACTED]?

10 MR. TESLICKO: Object

11 to --

12 THE WITNESS: No.

13 MR. TESLICKO: Object to

14 form.

15 BY MS. RHEE:

16 Q. I'm -- but you testified,

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 right?

21 A. That is correct. I was --

22 Q. All right. So for that

Page 150

1 category set of documents, did you put
2 each and every one of those documents in
3 your appendices?

4 A. No.

5 Q. Okay.

6 A. And I wasn't -- I don't
7 even know how I would issue a request.

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 So, no, that was never
12 issued.

13 Q. Well, but I --

14 A. Mm-hmm.

15 Q. That's a different issue.
16 I'm not asking for all the universe of
17 hypothetical documents that are out
18 there.

19 A. Mm-hmm.

20 Q. I'm saying, of the
21 documents, as you testified to --

22 A. Mm-hmm.

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1 sense of this. And as an engineer, I
2 can.

3 But I also understand that
4 people outside of high-tech would just
5 sort of shake their heads and -- and not
6 know what to make of them. And so those
7 I didn't cite because I didn't think
8 they would be helpful.

9 But -- but, yeah, during
10 that stage, that's what I do.

11 Q. Okay. That's helpful.

12 And then there was a
13 category set of documents, and I believe
14 your testimony is: [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 A. I'm sorry --

20 MR. TESLICKO: Object to
21 form.

22 THE WITNESS: That --

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1 Q. -- that you looked at --

2 A. Mm-hmm.

3 Q. [REDACTED]

4 [REDACTED]

5 A. Mm-hmm.

6 Q. [REDACTED]

7 [REDACTED]

8 A. Mm-hmm.

9 Q. -- did you cite each and
10 every one of those documents in your
11 appendices?

12 MR. TESLICKO: Object to
13 form.

14 THE WITNESS: No.

15 BY MS. RHEE:

16 Q. Okay.

17 A. There were some -- I've
18 cited the ones that were, let's call,
19 the most precise.

20 There were some documents
21 that, you know, arguably, you could say,
22 well, you know, how can you even make

Page 153

1 what -- what are we talking
2 about there?

3 BY MS. RHEE:

4 Q. Well, this is -- this is
5 your testimony --

6 A. Yes. Yes.

7 Q. -- and you talked about
8 looking at some documents, [REDACTED]

9 [REDACTED] -- I'm just going to read you
10 your testimony.

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 MR. TESLICKO: Object to
18 form.

19 THE WITNESS: That is kind
20 of hard to unpack.

21 And I -- I want to answer
22 your question and say I think --

Page 154

1 and that's my fault because I
2 just talk a lot.
3 So there are two aspects
4 over here.
5 I say that in Stage II, it
6 is my job to do due diligence
7 and look for any information
8 that may point out there is
9 something I have forgotten.
10 During that stage is the
11 time when I look at all of the
12 Google documents. [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED] And
16 you know, I'm happy hiking
17 somewhere else.
18 But in that process, [REDACTED]
19 [REDACTED]
20 [REDACTED], and then I try
21 to understand it.
22 Because it could be like

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1 avoid to do this step of due
2 diligence, because I'm
3 testifying here and I'm doing
4 work for the plaintiffs as a
5 professional, and there is
6 certain code of behavior that
7 describes that.
8 BY MS. RHEE:
9 Q. Okay. That's very helpful.
10 A. Mm-hmm.
11 Q. So I want to understand.
12 In this process, the
13 second-stage --
14 A. The second stage, yeah.
15 Q. -- process, you acknowledge
16 you did find some documents [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 A. Yes. Correct.
20 Q. Okay. Now --
21 A. And this would be one of
22 those documents that you referred to.

Page 155

1 what has happened, [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 I would like to think that
20 as an expert in this field, that
21 wouldn't happen. And it didn't.
22 But I cannot -- I should not

Page 157

1 Q. I totally get it.
2 A. Mm-hmm.
3 Q. I'm asking, for all of
4 those documents --
5 A. Mm-hmm.
6 Q. [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 A. Mm-hmm.
10 Q. -- did you include all of
11 those documents in your appendices?
12 A. I think so. I think so. I
13 think we did.
14 And especially -- like, if
15 we referred to the document, I think
16 so -- yeah. Sorry.
17 If we referred to the
18 document, if I relied on the document,
19 definitely yes.
20 Q. Yeah. But that's not my
21 question.
22 [REDACTED] [REDACTED]

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1 clearly saw in the way that you --

2 A. Mm-hmm.

3 Q. -- answered the question,

4 it seems like it was more than one

5 document. You clearly saw, as you put

6 it, some documents where --

7 A. Mm-hmm.

8 Q. -- [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 I am now asking you --

12 A. Mm-hmm.

13 Q. -- for that number of

14 unknown documents -- or unknown number

15 of documents [REDACTED]

16 [REDACTED].

17 Did you put them down, all

18 of them down, in one of your appendices?

19 A. I --

20 MR. TESLICKO: Object to

21 form.

22 [REDACTED] [REDACTED]

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1 put most of them down -- or I

2 put most of them down.

3 But I would be hesitant to

4 tell you that I put all of them

5 down.

6 However, if there is a

7 document that I haven't put down

8 [REDACTED], I

9 would be very happy to look at

10 it right now and analyze it and

11 tell you why.

12 You know, I don't think

13 there is a document like that.

14 But if there is, I would be very

15 happy to, you know, look through

16 it and tell you why I didn't

17 rely on it.

18 BY MS. RHEE:

19 Q. Okay.

20 MS. RHEE: Is it okay if

21 we take another break, because

22 I've had a lot of water.

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1 THE VIDEOGRAPHER: Off the

2 record at 11:35.

3 (Short break.)

4 THE VIDEOGRAPHER: On the

5 record at 11:48.

6 BY MS. RHEE:

7 Q. During all of these

8 breaks --

9 A. Mm-hmm.

10 Q. -- I never want to actually

11 know what, if anything, was said by

12 counsel. So I -- before Mr. Teslicko

13 jumps in and gives his warning like a

14 broken record, I just want to be very

15 clear, that is not what I'm asking.

16 A. Mm-hmm. Mm-hmm.

17 Q. But just for the record,

18 want to be assured that during all of

19 the breaks, are you talking about the

20 substance of your answers?

21 A. No. We are talking about

22 hiking.

Page 161

1 Q. Well, even there, I don't

2 want to know what -- what, in fact,

3 you're talking about, other than just

4 making sure that the substance of your

5 answers on the record are not the topic

6 of discussion.

7 A. But before I answer your

8 question, it was raised that I have

9 confused the two names.

10 I told you, I'm really

11 terrible with names. And if you look at

12 my responses to your questions, I'm

13 talking constantly about the GCP guy and

14 his response. And I thought that his

15 name was George Levitte.

16 And apparently that is not

17 his name. His name is something else.

18 Sam?

19 Q. Okay.

20 A. Let's go with Sam.

21 And so when you were asking

22 all of those questions, I was thinking

Page 178

1 VP guy?

2 Q. Okay. That's --

3 A. All right?

4 Q. -- also on the product

5 team.

6 A. On the product team. Yes.

7 I do -- okay. Yeah. I do remember

8 his -- I did read his deposition. Yes.

9 Q. Okay. You did read his

10 deposition?

11 A. Yes. Mm-hmm.

12 Q. Okay. And if you read his

13 deposition, were you aware that he also

14 testified about this document?

15 A. Do I remember in detail

16 that he talked about this document? No.

17 Q. How about just even

18 generally?

19 MR. TESLICKO: Object to

20 form.

21 THE WITNESS: No. I --

22 when I'm reading depositions,

Page 179

1 I -- I don't go and

2 cross-reference all the

3 documents that people are

4 talking about.

5 There are things through

6 the deposition -- well, I'm

7 reading them for two reasons.

8 First of all, to figure

9 out what is -- what is a

10 deposition.

11 But, second -- but --

12 BY MS. RHEE:

13 Q. Fair.

14 A. -- second, I'm kind of

15 looking for relevant information as it

16 pertains to my decisions.

17 So, for example, in case

18 of -- and I'm not going to ascribe it to

19 Mr. Craycroft because I could be wrong

20 about the name. But there is a VP of

21 ads that basically estimates the size of

22 his organization. And so that bit of

Page 180

1 information I remember because it is

2 relevant.

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 MR. TESLICKO: Object to

Page 181

1 form.

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 BY MS. RHEE:

8 Q. Are you aware of an

9 individual by the name of Glenn

10 Berntson?

11 A. I have read Mr. Berntson's

12 deposition.

13 Q. Okay. Yeah.

14 A. I am -- there is a reason

15 why I remember Glenn's deposition. Yes.

16 Q. Okay. So you also know

17 that he is on the product team?

18 A. He is on the product team,

19 New York office, manager. Maybe

20 director. But manager.

21 Q. And are you aware that he

22 also testified about this document?

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1 A. I am -- I don't recall the
2 part of his testimony as it pertains to
3 this document.

4

Response	Percentage
U.S. should take action to protect the environment	4%
U.S. should not take action to protect the environment	96%

11 MR. TESLICKO: Object to
12 form.

13

Row	Bar Length (approx. %)
1	45
2	100
3	100
4	100
5	25
6	85
7	80
8	100
9	95
10	100
11	100
12	100
13	100

1 A. On the product team. All
2 right. All right.

3 Q. Do you remember reading his
4 testimony?

5 A. Sitting here today, I don't
6 remember anything specific about his
7 testimony. Unlike Mr. Berntson --
8 Glenn, like, that one had a couple
9 things that pop up at me.

10 But, no, I cannot recall
11 specific parts of his testimony that
12 would stand out to me.

13 Q. Okay. So, again, sitting
14 here, you don't recall or know whether
15 or not he also was shown this document
16 and testified about it?

17 MR. TESLICKO: Object to
18 form.

19 THE WITNESS: That is fair
20 to say. Yes.

21 BY MS. RHEE:

22 Q. Okay. [REDACTED]

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Response	Percentage
Yes, the U.S. should take action to protect the environment	100%
No, the U.S. should not take action to protect the environment	0%

12 BY MS. RHEE:

13 Q. Okay. Are you familiar
14 with an individual by the name of Noam
15 Wolf?

16 A. I have heard the name Noam
17 Wolf as well.

18 If -- if you could, again,
19 put him in context, that would be
20 fantastic.

21 Q. Also an engineer on the
22 product team.

Response	Percentage
Yes, the current government is responsible	100%
No, the current government is not responsible	0%

8 MR. TESLICKO: Object to
9 form.

Age Group	Number of People
10	2
20	10
30	6
40	10
50	4
60	6
70	10
80	9
90+	10
100	4
110	6
120	10
130	10

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<p>1 MR. TESLICKO: Object to</p> <p>2 form.</p> <p>3 THE WITNESS: I have not</p> <p>4 analyzed the user consent to</p> <p>5 require user data.</p> <p>6 I am -- I'll admit I'm</p> <p>7 slightly confused as how -- who</p> <p>8 is the user that you're talking</p> <p>9 about in this case and how it</p> <p>10 applies to the Ad Exchange.</p> <p>11 And I'm not -- if you can</p> <p>12 clear up the context for me, I</p> <p>13 would be able to answer your</p> <p>14 question a little bit better,</p> <p>15 maybe.</p> <p>16 BY MS. RHEE:</p> <p>17 Q. Okay. But just sitting</p> <p>18 here today, you don't know about the</p> <p>19 role, if any, of a user in ad serving</p> <p>20 process?</p> <p>21 MR. TESLICKO: Object to</p> <p>22 form.</p>	<p>1 referring to different user.</p> <p>2 And -- and that's why I'm asking</p> <p>3 you for qualification -- for --</p> <p>4 sorry -- for clarification,</p> <p>5 because it can mean a publisher.</p> <p>6 You could reasonably say a</p> <p>7 publisher is a user of -- of</p> <p>8 DFP.</p> <p>9 BY MS. RHEE:</p> <p>10 Q. Okay.</p> <p>11 A. But you could also</p> <p>12 reasonably say, no, that's not a user;</p> <p>13 it's the ad agency that the publisher is</p> <p>14 employing that is the user of DFP.</p> <p>15 They are certainly not</p> <p>16 users of the -- of the buyer-side,</p> <p>17 right. So there you have advertisers,</p> <p>18 and they are the users.</p> <p>19 And, unfortunately, the</p> <p>20 term "user" means different things in</p> <p>21 different contexts.</p> <p>22 Q. Okay. You rely upon</p>
Page 207	Page 209
<p>1 THE WITNESS: No. I -- I</p> <p>2 would say that a "user" is a</p> <p>3 very loaded term here -- maybe</p> <p>4 loaded is a bad word.</p> <p>5 But it can have multiple</p> <p>6 meanings.</p> <p>7 When you say user, do you</p> <p>8 mean an advertiser? Do you mean</p> <p>9 a publisher? Who do you mean?</p> <p>10 BY MS. RHEE:</p> <p>11 Q. Okay. But you haven't come</p> <p>12 across the use of the term "user" in</p> <p>13 stat materials?</p> <p>14 MR. TESLICKO: Object to</p> <p>15 form.</p> <p>16 THE WITNESS: Sorry.</p> <p>17 I have come across the use</p> <p>18 of that term, and I have used it</p> <p>19 -- I have found it in different</p> <p>20 contexts.</p> <p>21 And so in different</p> <p>22 contexts, it was simply</p>	<p>1 Dr. Weissman's analysis, I think, as you</p> <p>2 put it, the analysis of the source code</p> <p>3 and data flow in AdX and DFP; is that</p> <p>4 right?</p> <p>5 A. Yes. That is correct.</p> <p>6 Q. Okay. What data flow do</p> <p>7 you believe Dr. Weissman reviewed in the</p> <p>8 source code?</p> <p>9 A. So, genuinely, I would</p> <p>10 refer you to Dr. Weissman's document on</p> <p>11 this because he kind of defines the</p> <p>12 details.</p> <p>13 But, for me, what was</p> <p>14 really important in his analysis were</p> <p>15 two things.</p> <p>16 I've asked for specific</p> <p>17 information about the code base to</p> <p>18 verify that it still keeps the same</p> <p>19 characteristics that it had when I last</p> <p>20 worked in it, and that information was</p> <p>21 provided to me.</p> <p>22 And --</p>

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1 Q. How was that provided to
2 you when you didn't look at the source
3 code yourself?

4 A. So it was provided to me --
5 I had access to Dr. Weissman's draft
6 report before the first round of our
7 report submittal.

8 So don't quote me on the
9 date, but July.

10 MR. TESLICKO: Instruct
11 you not to discuss drafts
12 because they are carved out by
13 the expert stipulation.

14 BY MS. RHEE:
15 Q. Are you going to follow
16 counsel's instruction not to answer that
17 question?

18 A. Yeah.

19 Q. Okay.

20 A. I'm sorry. But yeah.

21 Q. I had to ask.

22 Okay.

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1 A. You're doing your job.

2 Q. I just want to make clear,
3 since you did not look at the source
4 code yourself, did you have access to
5 anything that Dr. Weissman did that is
6 not set forth in his final reports?

7 A. No. I have not relied on
8 anything other than that -- other than
9 Dr. Weissman's analysis and his report.

10 Q. Okay. So insofar as you
11 make reference to relying upon
12 Dr. Weissman's source code analysis --

13 A. Mm-hmm.

14 Q. -- that analysis is what
15 Dr. Weissman sets out in his report and
16 in his source code appendix; is that
17 right?

18 A. That is correct.

19 MR. TESLICKO: Object to
20 form.

21 BY MS. RHEE:
22 Q. Okay. And that's -- and

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1 that's the total? There's nothing else?

2 A. I have also reviewed
3 Dr. Weissman's reports themselves, in
4 particular, portions that discuss what
5 we have referred to -- that could be
6 relevant to the things that we are
7 talking about, Stage I and Stage II of
8 DFP divestiture, because in those stages
9 the -- he's discussing the ability to
10 create APIs and the ability to cut out a
11 code and open-source that portion of the
12 code.

13 And I'm relying on his
14 expert opinion that the code is -- it is
15 possible to do those things.

16 Q. Okay. In particular, you
17 seem to spend some time looking at what
18 you referred to as Dr. Weissman's source
19 code statistics; is that right?

20 A. That is correct.

21 Q. Okay. And what do you
22 understand Dr. Weissman to have done to

Page 213

1 put together his source code metrics
2 that he sets out in his source code
3 appendix?

4 A. So I have seen some of the
5 statements that Dr. Weissman lists. He
6 happens to use SQL to obtain this
7 information.

8 For me, there are specific
9 things that I have asked for about the
10 code base, and I have obtained the
11 information that I have asked for.

12 Q. Okay. Where do you set out
13 what is the information that you asked
14 for and the information you obtained?

15 A. Oh, in the table where I
16 list the source code information.
17 That's the information that I asked for.
18 That's the information that I obtained.

19 Q. I see. So what you asked
20 for were these source code metrics?

21 A. That is correct. Yes.

22 Q. Okay. I see. I see.

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1 So what specifically did
2 you ask for?

3 MR. TESLICKO: I'm just
4 going to instruct you not to
5 disclose the substance of any
6 communications with Keystone or
7 with counsel.

8 THE WITNESS: Mm-hmm.
9 So when I have worked at
10 Google, I had an insight, and I
11 was, you know, inside Google3,
12 and I looked at some of the
13 stuff.

14 And so what I'm looking
15 for over here is, is the code
16 base still what I would consider
17 clean and healthy code base.
18 And there are a couple of things
19 that can tell you that.

20 Not a single line in that
21 table by itself necessarily
22 means much. But, in general,

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1 C++ code base has, I don't know,
2 tens of thousands of files and
3 they are all smaller than 25 to
4 30 lines of code. That would
5 give me a pause.

6 What's going here. Like,
7 why would anybody do this. And
8 I would question what kind of
9 code base I'm dealing with.

10 So these are sort of --
11 consider them health checks,
12 right.

13 If you were to go to a
14 doctor and they do a blood test
15 and they look at the number of
16 parameters, you look at it and
17 say is this person healthy, and
18 you basically make a decision
19 that, yeah, this -- this is a
20 healthy person.

21 Now, that really does not
22 mean, necessarily, that the

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1 you're looking at -- and, again,
2 I make predictions about the
3 code base before I get the
4 confirmation.

5 So I would expect AdX to,
6 for example, be smaller than all
7 of the utilities.

8 Is that -- is that true?
9 Yes, it is.

10 I would expect DFP, to a
11 little bit, be -- be a little
12 bit bigger than AdX but, again,
13 smaller than utilities. Is that
14 true? Yes.

15 So those kinds of things
16 are consistent with my
17 expectations.

18 But here are the other
19 things that I want to see.
20 Let's say you are talking about,
21 as we are here, about C++ code
22 base, and you find out that the

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1 person is not suffering from
2 something you don't see.

3 But nine times out --
4 actually, I would say 99 times
5 out of 100, it gives you a
6 really clear insight in what
7 you're dealing with.

8 And that is kind of -- the
9 simple statistics can tell you
10 how -- how clean is this code
11 base.

12 And for me, it confirmed
13 that Google has continued with
14 their practice of being diligent
15 and professional and strict
16 about what they allow in and out
17 of the code base.

18 BY MS. RHEE:
19 Q. Okay. We're going to go to
20 the details of this --
21 A. Mm-hmm.
22 Q. -- table in a minute but --

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1 A. All good.

2 Q. -- but based on your

3 answer, I have some follow-ups for you.

4 A. Sure.

5 Q. You likened this to a

6 health check.

7 A. I just did.

8 Q. Okay. Do you have either a

9 textbook citation, a manual citation, an

10 industry citation that lays out the kind

11 of health check methodology that you

12 just walked us through --

13 MR. TESLICKO: Objection.

14 BY MS. RHEE:

15 Q. -- where, you know,

16 counting the number of files and lines

17 of code is a way to do this kind of

18 health check, where, as you put it,

19 nine -- nine times out of ten it tells

20 you helpful information about the

21 person's health?

22 MR. TESLICKO: Object to

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1 form.

2 THE WITNESS: Understood.

3 So you can find tremendous

4 number of discussions about this

5 topic in particular lines of

6 code.

7 I personally have totally

8 objected when people have used

9 lines of code in contexts that I

10 felt were completely and utterly

11 inappropriate for.

12 And you could also make an

13 argument that, well, you're

14 talking about roughly

15 one-and-a-half-million lines of

16 code for AdX. Can all of that

17 code be rearranged so that the

18 number of lines changes to be

19 something a lot smaller?

20 Absolutely.

21 You could rewrite all of

22 the code probably

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1 programatically so that the

2 number of lines of code will be

3 exactly the same as the number

4 of -- number of files you're

5 dealing with.

6 Because lines don't mean

7 anything to the computers. They

8 mean something to the

9 programmers.

10 And so people can, and

11 they do, make a very reasonable

12 argument by saying, so lines of

13 code are meaningless.

14 BY MS. RHEE:

15 Q. What -- do you cite to any

16 of that literature?

17 A. No, I don't.

18 Q. Okay.

19 A. Because it's -- it's an

20 ongoing discussion. And I think it's

21 going to be -- I don't think it's ever

22 going to be resolved. It is just one of

Page 221

1 those philosophical topics where lines

2 of code -- it depends on what you use

3 the metric for.

4 You will find my work

5 strongly objecting to industry

6 benchmarks in performance testing.

7 And if you take it out of

8 context, you would say, all right, so

9 you're against benchmarks. Why did you

10 then spend all of your time at Google

11 wasting their money writing benchmarks.

12 And, you know, it would feel that way.

13 I object to what people use

14 benchmarks for. It -- benchmarks give

15 you very useful information.

16 So in case of Google,

17 benchmarks enabled my development

18 partners to quickly find out. I write

19 something that allows them early in the

20 morning to look and say, did I make a

21 giant performance blunder yesterday

22 without realizing I was doing that.

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1 That was the purpose of the
2 benchmark. It was incredibly valuable.
3 Now, if you take that
4 benchmark and you say, and this
5 benchmark proves that the code for
6 rightly is far better performed than the
7 code for something else, I'm going to
8 object to that. It wasn't written for
9 that. That is not the purpose of that
10 benchmark.
11 So in the discussion of
12 lines of code, they can be both very
13 useful and useless.
14 Okay. If a manager uses
15 lines of code to promote people, like, I
16 get hives. That is such a stupid
17 statistic to use in that context. So if
18 you use lines of code in that context,
19 yeah, they are -- they are terrible.
20 But if you use lines of
21 code and say, these are reasonable lines
22 of code written by engineers who were

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1 answer your question "no."
2 But I'm also not
3 referencing GAM on the standards
4 of C++ language. It's just C++,
5 you know, so --
6 BY MS. RHEE:
7 Q. I know.
8 But I'm asking as a
9 methodological matter, insofar as you're
10 positing that this is a sound means --
11 A. Mm-hmm.
12 Q. -- to do a health check,
13 can you cite to anything that supports
14 that proposition?
15 MR. TESLICKO: Object to
16 form.
17 THE WITNESS: I am certain
18 I can find those references for
19 you and would be happy to
20 provide them for you.
21 BY MS. RHEE:
22 Q. Okay. But you don't have

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1 not trying to get promoted by just
2 writing more lines and -- and roughly
3 describe the size of the project, then
4 that actually makes sense.
5 Q. I'm asking --
6 A. Mm-hmm.
7 Q. -- insofar as you think in
8 this context --
9 A. Mm-hmm.
10 Q. -- i.e., assessing
11 timelines and complexity --
12 A. Mm-hmm.
13 Q. -- do you have any
14 references to literature anywhere that
15 says, looking at these kind of simple
16 statistics --
17 A. Mm-hmm.
18 Q. -- is actually, as you put
19 it, a good health check?
20 MR. TESLICKO: Object to
21 form.
22 THE WITNESS: So I will

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1 it right now in any of your appendices?
2 A. No. I really didn't think
3 we would be discussing such basic things
4 that kind of a general agreement.
5 As I said, I also don't
6 cite anything on the history and
7 development of C++.
8 Those things are just, you
9 know, building blocks. Let's call them
10 building blocks of the whole process,
11 so...
12 Q. Okay. Okay.
13 A. But if you would like me
14 to, I will happily provide you with, you
15 know, references for all of those
16 things.
17 Q. Okay. Thank you.
18 MS. RHEE: Is now a good
19 time to take a lunch break?
20 MR. TESLICKO: Sure.
21 Let's go off the record.
22 THE VIDEOGRAPHER: Off the

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1 record at 12:44.
2 - - -
3 (Whereupon, a luncheon
4 recess was taken.)
5 - - -
6 A F T E R N O O N P R O C E E D I N G S
7 - - -
8 THE VIDEOGRAPHER: On the
9 record at 1:23.
10 - - -
11 CONTINUED EXAMINATION
12 - - -
13 BY MS. RHEE:
14 Q. Okay. So we left off
15 talking about this source code metric
16 table.
17 Do you recall?
18 A. Yes, I do recall.
19 Q. Okay. So why don't we
20 actually look at the -- no pun
21 intended -- the source.
22 A. Mm-hmm.

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1 Q. I'm going to get what I
2 hope is the Weissman Table 2, from his
3 source code appendix.
4 MS. RHEE: Thank you so
5 much, Anita.
6 (Document marked for
7 identification as Bjedov
8 Exhibit 3.)
9 THE WITNESS: Am I allowed
10 to start looking at it?
11 BY MS. RHEE:
12 Q. Oh, yes, of course.
13 A. I wasn't sure.
14 Q. Of course.
15 What I'm directing your
16 attention to, because I think you
17 replicate it --
18 A. Mm-hmm.
19 Q. -- in your own report, is
20 this Table 2 called "Source Code
21 Metrics."
22 Do you see that?

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1 A. Mm-hmm. I do.
2 Q. Okay. And this is a
3 running of a tool to basically do counts
4 of each of these items, right?
5 A. Yeah. You can -- so
6 Professor Weissman used the tools that
7 he prefers.
8 I -- I would get the same
9 numbers using standard Unix commands,
10 provided that the repo is available
11 through -- through Unix, which I think
12 it is.
13 Q. It's a pretty simple -- you
14 know, a tool or piece of code just to
15 count.
16 A. Yeah. You count and grip,
17 and -- yeah. But sure.
18 Q. Okay. And then what he's
19 counting are the number of files --
20 A. Mm-hmm.
21 Q. -- classes, functions, and
22 code lines for what he puts in these

Page 229

1 columns: Supermixer, BOW, AdX, and GFP.
2 Fair?
3 A. That is -- that is correct.
4 Yeah.
5 Q. Okay. And you see the
6 count for this column titled "AdX" to be
7 the complete count of source code
8 associated with AdX?
9 MR. TESLICKO: Object to
10 form.
11 THE WITNESS: I would say
12 absolutely not.
13 This is really more of
14 a -- you know, let's call it --
15 let's call it server-side stuff.
16 So I would not expect the
17 front-end code to be written in
18 C++.
19 And I would not expect to
20 find it in this directory. It
21 would be odd to do that.
22 BY MS. RHEE:

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1 pleasure of interacting with.

2 From the ability to just

3 list files, which files are in this

4 directory, ls, to the things like what

5 is the name of the kernel that -- that

6 you are running. You name ls-a.

7 All of those commands, they

8 are a part of operating system, but they

9 are -- let's say they are not the core

10 part. They are not the kernel, but they

11 are called utilities.

12 And so I'm talking about

13 utilities of these things that you

14 really need in order to provide the

15 service you're providing. But they are

16 not necessarily the part of your core.

17 So in case of AdX, you will

18 say it's an exchange. Its core part is

19 the exchange.

20 But, you know, it may

21 realize -- so, for example, you can

22 utilize in BOW for a lot of things. BOW

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1 is those utilities that basically

2 removes some responsibility from AdX to

3 allow AdX to be lean, mean, and operate

4 cleanly. But AdX can call it and say,

5 hey, give me this.

6 So a very, I would say,

7 advanced or -- the right way to develop

8 computer systems.

9 Q. Okay. But the upshot is, I

10 think, based on your earlier

11 testimony --

12 A. Mm-hmm. Mm-hmm.

13 Q. -- is it's your opinion

14 that BOW and Supermixer need to be

15 divested, along with what you're calling

16 core AdX --

17 A. Mm-hmm.

18 Q. -- in order to provide the

19 functionality that an acquirer would

20 expect.

21 Is that -- have I got your

22 testimony right?

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1 A. Very close.

2 I would say that there are

3 certainly functions inside BOW and

4 inside Supermixer. Supermixer is

5 probably, again, most likely its own

6 product. But certainly inside BOW, that

7 the buyer would have to get the copy of.

8 All of them, I cannot tell

9 you that, but certainly a fair number of

10 it.

11 Because as you will see,

12 BOW being the -- what's called the

13 utility-type part of the code base, is

14 larger than the rest of the stuff.

15 And so there could be parts

16 in BOW that apply just to AdX. There

17 could be parts that apply to just the

18 DFP. There could be parts in BOW that

19 support Supermixer itself. And there

20 could be some parts that are used by all

21 three.

22 But there could be other

Page 241

1 parts they use by one or two or -- there

2 are probably even parts that are not

3 used by anybody and haven't been removed

4 from the code base for either historical

5 or -- or, actually, strategic reasons.

6 So parts of it would have

7 to certainly be provided to the

8 purchaser to make AdX work.

9 The other parts, Google

10 could reasonably say, well, this is not

11 necessary to make AdX work, and,

12 therefore, we are not going to be

13 providing it.

14 Q. Okay. So would you

15 consider BOW and Supermixer to be a

16 dependency of AdX and DFP?

17 A. I would not use the term

18 "dependency."

19 I would say that AdX relies

20 on them, because they are really more --

21 they are kind of on the same level, if

22 that makes sense.

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1 And so they --

2 Q. It doesn't make sense.

3 A. All right.

4 Q. This is why I'm asking the

5 question, because -- I mean, let's just

6 level set.

7 You are familiar with,

8 because you use it in your own report --

9 A. Mm-hmm.

10 Q. -- and certainly

11 Dr. Weissman uses it in his, and you

12 rely upon --

13 A. Mm-hmm.

14 Q. -- this notion of a

15 dependency, right?

16 A. Absolutely. Yes.

17 Q. Okay. And how long a

18 divestiture takes or your step of

19 technical decoupling --

20 A. Mm-hmm.

21 Q. -- depends on both the

22 number of dependencies and the

Page 244

1 dependency, and you refer to a

2 dependency, and what you're describing

3 here for Supermixer and BOW, which you

4 do not call a dependency --

5 A. Mm-hmm.

6 Q. -- but instead call a

7 related utility system?

8 A. So in my example, when I

9 was describing UNIX, I wouldn't say that

10 UNIX kernel depends on utilities. It's

11 just they -- they are -- there is

12 kernel, there is utilities, but they are

13 one, right?

14 And even though you could

15 separate them by code base, you compile

16 them differently and separately and so

17 on, they -- from the computer science

18 standpoint and from the practitioner

19 standpoint, you would never -- I don't

20 think any engineer would say, oh, when I

21 say UNIX, I mean UNIX kernel, and I

22 think UNIX Utilities, right, is

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1 complexity of those dependencies, right?

2 MR. TESLICKO: Object to

3 form.

4 THE WITNESS: Not exactly.

5 That's a very -- because, again,

6 the parallelization comes to the

7 issue.

8 In the strictest technical

9 term, you could really say that

10 all four of these most likely

11 depend on each other and call

12 each other.

13 Now, do they call

14 everything inside BOW? No --

15 BY MS. RHEE:

16 Q. No. Understood --

17 A. But some aspects of it, for

18 sure.

19 Q. Right. But that's the

20 reason why I'm asking.

21 What's the difference

22 between how Dr. Weissman refers to, as a

Page 245

1 dependencies.

2 We just say UNIX. It's the

3 product. It's the kernel. It contains

4 all of the utilities. We use it as one.

5 Q. Yeah. But when we're

6 talking about UNIX here, we're talking

7 about internal Google infrastructure and

8 its product --

9 A. Product.

10 Q. -- source code.

11 A. Mm-hmm.

12 Q. So here I just want to be

13 clear --

14 A. Mm-hmm.

15 Q. -- about what your

16 testimony is.

17 Your view is that BOW and

18 Supermixer, vis-à-vis AdX and DFP, are

19 not dependencies.

20 MR. TESLICKO: Object to

21 form.

22 THE WITNESS: I would call

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1 missed it, personally, I would
2 be absolutely stunned.
3 And based on Professor
4 Weissman's credentials,
5 expertise, and his work, I see
6 no reason to even contemplate
7 that hypothetical.
8 You are suggesting that he
9 doesn't have the -- truly, the
10 basic level of competence.
11 To give you an example of
12 how easy it is, I literally
13 would have to say, "Grab AdX
14 recursively," and I'm going to
15 get the whole thing.
16 And I personally cannot
17 imagine scenario in which an
18 expert of Professor Weissman's
19 caliber would be unfamiliar with
20 that.
21 But if you -- if you can
22 show me that, obviously, it

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1 use.
2 I would say that this is
3 his area of expertise and not
4 mine, and so, frankly, I'm
5 looking forward to the
6 opportunity to find out why he
7 wouldn't use the things that I
8 would use. But it's also been
9 six years since I last have done
10 it.
11 But I would be -- between
12 the two of us, I would trust his
13 tools more than I would trust
14 mine, and I know that my tools
15 would answer this in, like,
16 split second.
17 So on this topic, he is
18 the expert, and I'm just, you
19 know, a random person down the
20 street.
21 BY MS. RHEE:
22 Q. So if it's Professor

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1 would change how I look at the
2 stuff, because, then,
3 information that I have been
4 relying on is inaccurate.
5 BY MS. RHEE:
6 Q. Okay. So if it turned out
7 Professor Weissman did not do what
8 you're suggesting, which is run the tool
9 at the top level of each of these
10 folders, but, instead, he actually went
11 to each of those folder paths and then
12 ran the count within each folder, what
13 would be your response to that
14 methodology?
15 A. My --
16 MR. TESLICKO: Object to
17 form.
18 THE WITNESS: My response
19 would be that I've seen parts of
20 the tools that Professor
21 Weissman is using and they are
22 different than the ones I would

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1 Weissman's testimony that this Table 2
2 is not meant to represent all of the
3 available files or directories
4 associated with AdX or DFP, how useful
5 is it to you in your health check?
6 A. Very useful, because keep
7 in mind that I am not using this table
8 to say, oh, there is 400 -- sorry --
9 4,659,000 lines of code. That's not --
10 that number is irrelevant.
11 I'm looking for the
12 patterns. I am -- these numbers inform
13 my decision on is this code base what I
14 would expect a Google3 code base to
15 behave like and look like.
16 Q. I just want to pause --
17 A. Mm-hmm.
18 Q. -- because, at least in
19 earlier testimony, you told us the
20 reason why this was relevant to you --
21 A. Mm-hmm.
22 Q. -- is because the numbers

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1 in the columns for BOW and Supermixer --

2 A. Mm-hmm.

3 Q. -- are bigger than the

4 numbers in the columns for AdX and GFP.

5 MR. TESLICKO: Object to

6 form.

7 BY MS. RHEE:

8 Q. Fair?

9 A. No. I told you that what

10 I'm looking for -- those are some of the

11 numbers that I'm looking for.

12 I'm looking to identify

13 utilities, and I know that the utilities

14 will be bigger than the other files and

15 so on.

16 Q. Well, you're looking to see

17 if they are going to be bigger --

18 A. Yes.

19 Q. -- than the files, as you

20 put it, for AdX and DFP.

21 A. That is correct. Yes.

22 Q. Okay. So if it turns out

Page 263

1 that, because what Dr. Weissman did in

2 order to get to the counts for the

3 columns associated with AdX and DFP are

4 incomplete, and you don't actually know

5 what those numbers are, how can you do

6 the comparison of what those actual

7 numbers are, to the numbers for the

8 related utilities?

9 MR. TESLICKO: Object to

10 form.

11 THE WITNESS: So Professor

12 Weissman used a process and a

13 methodology to obtain these

14 numbers.

15 My starting assumption is

16 that Professor Weissman did not

17 intentionally try to deceive the

18 court and has relied on his

19 expertise, so he has used

20 exactly the same process in all

21 four of these directories.

22 And, you know, maybe you

Page 264

1 have information that shows

2 otherwise, but this is my

3 working premise.

4 His analysis may have been

5 incomplete, but it's going to be

6 incomplete in that case.

7 And -- and I do want to

8 say, this is your stipulation.

9 The parameters that I disagree

10 with, it's going to be

11 incomplete in exactly the same

12 way in all four of these --

13 BY MS. RHEE:

14 Q. Well, you don't know that,

15 sitting here, right, because you don't

16 know -- because you don't know what's

17 contained underneath each of these

18 top-line directories, or, I guess, they

19 are referred to as top-level folders,

20 how many folders are associated with BOW

21 and Supermixer that are not part of

22 these particular folder paths that

Page 265

1 Dr. Weissman describes, right?

2 MR. TESLICKO: Object to

3 form.

4 THE WITNESS: So the issue

5 here is the process, right.

6 He is doing the process,

7 trying to identify these files.

8 Let's assume that that

9 process -- and, again, I

10 disagree with this hypothetical

11 strongly.

12 And I am not trying to at

13 all suggest that Professor

14 Weissman would make this

15 mistake, because I don't -- if

16 you look at his credentials and

17 so on, as far as I'm concerned,

18 he is the expert in this area.

19 But, even, let's say,

20 entertaining your hypothetical,

21 he's using a process, and that

22 process will produce the same

Page 266

1 type of an adder in all four of
2 these columns.
3 And what I'm looking for
4 is things between them and
5 things even around the columns,
6 ratios, total numbers, and so
7 on, to inform my opinion.
8 So if you could give me
9 any sort of description of what
10 kind of mistake could you be
11 thinking about that -- that we
12 could do, even, you know, me, if
13 I were doing this, that would
14 somehow make the mistakes in AdX
15 column but would leave the
16 remaining three correct, or the
17 other way around, I can't -- I
18 cannot imagine what that would
19 be.
20 You know, it's -- it's the
21 same code. It's doing what you
22 tell it to do, and it's doing it

Page 267

1 on all four of these, you know,
2 at the same time.
3 BY MS. RHEE:
4 Q. Okay.
5 A. But I do want to say, he is
6 the expert. I look at his credentials.
7 And I go, like, this is a very low-level
8 task. It would be impossible for an
9 expert of his caliber to make -- you
10 know, to make a mistake in that
11 particular field.
12 Q. Okay. You can put that
13 aside.
14 In your opening report, you
15 conclude that Google's operational
16 separation for DFP and AdX -- I'm sorry.
17 You talk about how AdX and
18 DFP already have operational separation.
19 Do you recall that?
20 A. Yes, I do.
21 Q. Okay. I'm going to
22 actually --

Page 268

1 MS. RHEE: Let's mark for
2 this deposition Exhibit 4, which
3 is your opening report.
4 THE WITNESS: All right.
5 I have a copy of it, so --
6 BY MS. RHEE:
7 Q. Well, I'm going to give it
8 to you.
9 A. All right.
10 Q. Because we have to have a
11 marked copy.
12 A. No problem.
13 (Document marked for
14 identification as Bjedov
15 Exhibit 4.)
16 BY MS. RHEE:
17 Q. All right. So I'm going to
18 direct your attention to Page 47,
19 Paragraph 116.
20 And you can keep me honest.
21 These are your words in your report.
22 "Google distinguishes

Page 269

1 between 'AdX Serving' and 'DFP Serving,'
2 which reflects operational separation in
3 service deployment and management."
4 Yes?
5 A. Yes.
6 Q. Okay. From your report?
7 A. Mm-hmm.
8 Q. And those are your words?
9 A. Yes.
10 Q. You wrote those?
11 A. My team and I worked
12 together, but I proofread and approved
13 every word in the -- in the whole
14 report.
15 Q. Okay. So even if they
16 aren't your words, you approved of them?
17 A. No, no, no. The words are
18 mine with the exception of articles,
19 which you have probably noticed all of
20 those were more or less added by
21 somebody else who English-proofread the
22 paper.

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1 form.

2 BY MS. RHEE:

3 Q. You -- you didn't look at,

4 for example, internal Google documents

5 at that time. Okay.

6 COURT REPORTER: You have

7 to answer out loud. Sorry.

8 THE WITNESS: No, I

9 didn't.

10 BY MS. RHEE:

11 Q. Okay. Just based on your

12 answer, I want to understand, in your

13 thinking about dependencies --

14 A. Mm-hmm.

15 Q. -- in your first stage of

16 coming up with your expectation about

17 the number of dependencies there would

18 be and how long it would take to replace

19 them.

20 A. Mm-hmm.

21 Q. Did you look at and/or rely

22 on Professor Weissman in your Stage I

Page 287

1 process?

2 A. No.

3 MR. TESLICKO: Object to

4 form.

5 BY MS. RHEE:

6 Q. Okay. That's very helpful.

7 I see.

8 So your reliance on

9 Professor Weissman is in your, as I

10 think you put it, pressure testing, or

11 testing of your Stage I opinion?

12 MR. TESLICKO: Object to

13 form.

14 THE WITNESS: I would say

15 it is during the step where you

16 refine your opinion.

17 Again, AdX is an Ad

18 Exchange.

19 I have actually,

20 firsthand, worked on complete

21 migration, partially write and

22 just a whole mess of an Ad

Page 288

1 Exchange.

2 And so I have a reasonable

3 starting point to say, I know

4 how many dependencies I should

5 be dealing with here.

6 And I make my own

7 estimates around that, and I do

8 my work related to that.

9 BY MS. RHEE:

10 Q. And you did all of that

11 without looking at or relying on

12 Professor Weissman or any of his work?

13 A. That is correct.

14 Q. I see. Okay.

15 And then I take it from

16 your answer, when you got to the point

17 where you looked at Professor Weissman's

18 opinion and his work, it confirmed for

19 you your initial assessment and your

20 expectation.

21 Is that -- have I got that

22 right?

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1 A. That is fair to say. We

2 were roughly talking about, let's say,

3 the same -- certainly, the same order of

4 magnitude.

5 Q. I see.

6 Okay. But you didn't need

7 him or rely on him to get to your

8 original estimates?

9 A. No.

10 MR. TESLICKO: Object to

11 form.

12 BY MS. RHEE:

13 Q. Okay. And you got to your

14 original estimates -- I just want to

15 understand -- again, based on your own

16 experience?

17 A. My personal experience with

18 migrating a similar-type product or --

19 you can even call it the same, but

20 probably not the same.

21 Q. Okay. Which product is

22 that?

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[REDACTED]

12 And I was the only
13 performance and capacity engineer
14 involved in that whole product.
15 Q. Okay. And so that's the
16 experience that you relied upon in
17 making your original estimates?
18 MR. TESLICKO: Object to
19 form.
20 THE WITNESS: That is the
21 experience I called on. One of
22 the things that I've done in the

Page 291

1 past but certainly not, you
2 know, the only.
3 It's -- I would say it's
4 the closest. But there are, you
5 know, other things that you get
6 involved with that you can
7 reasonably say they may not be
8 ad exchange but they will
9 require the same dependencies.
10 BY MS. RHEE:
11 Q. Okay.
12 MS. RHEE: Why don't we
13 take a quick break.
14 MR. TESLICKO: Great.
15 THE VIDEOGRAPHER: Off the
16 record at 2:18.
17 (Short break.)
18 THE VIDEOGRAPHER: On the
19 record at 2:32.
20 BY MS. RHEE:
21 Q. Okay. New topic.
22 Your migration plan assumes

Page 292

1 that AdX and DFP will be migrated first
2 to the Google public cloud?
3 A. I am proposing what I would
4 call one reasonable option, but I'm not
5 saying that other people could not come
6 up with other reasonable options that,
7 you know, go to different destination
8 and so on.
9 Just one reasonable option,
10 and in my option, I propose going to
11 Google public cloud, yes.
12 Q. Okay. And that option that
13 you put forth --
14 A. Mm-hmm.
15 Q. -- which is that AdX and
16 DFP first get migrated to the Google
17 public cloud, that impacts your
18 estimated timelines that you put forth
19 for all of the downstream steps, right?
20 MR. TESLICKO: Object to
21 form.
22 THE WITNESS: Yes and a

Page 293

1 no.
2 The reason why I suggest
3 you should go -- you should
4 consider going to Google public
5 cloud is because I have
6 guarantee that I will have
7 expertise available on Google
8 public cloud and, obviously, on
9 Google public -- private cloud
10 available to me at the time of
11 divestiture.
12 If, for example, let's say
13 Amazon were to decide and be a
14 buyer -- and this is me just
15 picking a person out of thin
16 air. I have no idea if they are
17 in any way, shape, or form,
18 one -- but they are the owners
19 of their own cloud, right. So
20 they are the owners of AWS and
21 S3.
22 And so if a potential

Page 386

1 And --

2 BY MS. RHEE:

3 Q. You mean a software

4 engineer?

5 A. Software engineer from the

6 product team, yes.

7 And you should be able to

8 get this done in a couple of days.

9 Q. Okay. I just want to --

10 A. Mm-hmm.

11 Q. Thank you for the

12 clarification.

13 A. No problem.

14 Q. I am not an engineer, so I

15 now want to just clarify.

16 Your testimony today is

17 that you believe you really just need

18 one performance engineer, one site

19 reliability engineer, and one software

20 engineer from the product team working

21 over a couple of days?

22 A. Yeah. To get this done.

Page 387

1 Q. Okay. And this is the

2 first stage of your migration plan that

3 you labeled "Deployment Analysis"?

4 A. "Deployment Analysis," yes.

5 Q. Okay. All right.

6 And the second stage of

7 your --

8 A. Mm-hmm.

9 Q. -- four-stage migration

10 plan you call "Technical Decoupling,"

11 correct?

12 A. Correct.

13 Q. Okay. And that's the stage

14 of your migration plan that you believe

15 will take the most amount of time,

16 correct?

17 A. That is correct, yes.

18 Q. Okay. And that stage is

19 evaluating the replacements for all of

20 the dependencies for AdX and DFP and

21 then choosing the best replacement

22 options?

Page 388

1 MR. TESLICKO: Object to

2 form.

3 THE WITNESS: No. What --

4 what you're doing in that stage

5 is -- so you have found the

6 systems that you are relying on

7 and you need to replace.

8 Not only are you picking a

9 system that you will be

10 eventually replacing it with,

11 but you actually are doing the

12 cuts.

13 You are -- in the first

14 stage -- and how I would suggest

15 that they do this -- is

16 basically write a simple

17 passthrough calls, and so you --

18 you kind of add a layer. You

19 can call it a mock, if you like.

20 And in the first stage

21 that thing does nothing but

22 passes through the call that

Page 389

1 will then go to whatever is

2 still currently the system

3 supporting AdX in a Google

4 private cloud.

5 Once you have identified

6 all of those, let's say, for

7 database, because that is the

8 one that I believe should start

9 first, the -- the first thing

10 that I would do is verify did we

11 really identify all of those

12 correctly.

13 And now because all of the

14 calls are going through the

15 mock, that is relatively easy to

16 do.

17 I sort of disable the

18 mock, and if the database is

19 still getting calls from me,

20 that means that there are places

21 that I've missed them, and I

22 have to go and find them as well

Page 390

1 and redirect them to go to my
2 mock implementation of the call,
3 which is doing nothing but doing
4 the passthrough.

5 At this point in time, I
6 have all of the database calls
7 listed in one place and
8 available to me.

9 And, hopefully, by this
10 point in time, we have decided
11 to -- as to what is going to be
12 our replacement.

13 But let's say we haven't.
14 This would be a great place and
15 opportunity to say, you know,
16 let's -- let's speak to
17 different replacement
18 candidates. And we have all of
19 this code in front of us. Let's
20 just write substitute APIs for
21 two different databases, if
22 that's what we are choosing.

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1 But this is also a place
2 that, if you have a buyer
3 already identified, you can get
4 their input on what is the
5 replacement system they would
6 like.

7 And, fundamentally, you
8 just have to rewrite those APIs.

9 BY MS. RHEE:

10 Q. Okay. And sitting here
11 today --

12 A. Or API calls.

13 Q. Sitting here today, what is
14 your opinion about how long this step or
15 stage in the -- your four-step migration
16 plan, it would take?

17 A. So I have given that stage
18 eight months, and I -- when I make these
19 kinds of determinations, in general --
20 I've been called a pessimist, so just so
21 you know.

22 But the way I look at

Page 392

1 making my time estimates is, honestly,
2 how would I feel if somebody told me, do
3 this in this amount of time. And if I
4 would feel like, ooh, that's -- that's
5 tight. It's possible but tight.

6 That is not going to be the
7 estimate I'm going to give, because I
8 don't think -- I don't think that's fair
9 to the engineers who are tasked with the
10 job.

11 And so the way I come up
12 with something like eight months is, of
13 all the systems that we have talked
14 about, F1 is going to be the most
15 complex replacement, in my opinion.

16 I would be surprised if I'm
17 wrong about that.

18 You know, if there are some
19 other databases that they are calling,
20 they will be really small compared to
21 the -- to the F1 stuff.

22 And so I look at it, and I

Page 393

1 say, given the size that I have been
2 told about the system, how much time
3 would it take to migrate a database of
4 that size into the new environment.

[REDACTED]

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Page 396

20

MR. TESLICKO: Object to

21

form.

Page 395

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6

MR. TESLICKO: Object to

7

form.

15 BY MS. RHEE:

16 Q. Okay. That's what I wanted
17 to understand.

18 A. Yeah. No problem.

19 Q. And -- okay. So that's
20 Stage II of your migration plan.

21 A. Mm-hmm.

22 Q. You think it will take no

Page 490

[REDACTED]

Page 492

[REDACTED]

Page 491

[REDACTED]

Page 493

[REDACTED]

11 At Google, that priority is
12 search. You take the Search away,
13 the -- you know, people are not just
14 going to come to see ads. You have to
15 put Search above everything else. And
16 then you put ads.

17 And now you're looking at
18 maybe Gmail as another, you know, viable
19 thing that you have to watch out for.

20 You know, at Facebook there
21 are other products. They also make some
22 money and so on. But you have to take